[redacted]

October Term, 1940

No. 97

[redacted]

Petitioner,

v.

PROCTER & GAMBLE COMPANY,

Respondent.

On Writ of Certiorari to the United States Court of Appeals for the Second Circuit

SUPPLEMENTAL BRIEF FOR PETITIONER IN REPLY TO SUPPLEMENTAL BRIEF OF RESPONDENT

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In the
Supreme Court of the United States

OCTOBER TERM, 1920.

No. 93.

BERLIN MILLS COMPANY, *Petitioner,* *vs.* THE PROCTER & GAMBLE COMPANY, *Respondent.*	On Writ of Certiorari.

Supplemental Brief of Petitioner in Reply to Supplemental Brief of Respondent.

The Supplemental Brief of the Respondent contains such erroneous and misleading statements of fact, on which it bases its argument on behalf of the validity of the patent in suit, that we are compelled to ask the privilege of this reply.

Respondent's Reply Brief is built up on the following statement on page 4:

> "The product of the patent was not old, but embodied a radically and entirely new principle. In no compound of the prior art was the relative proportions of linolin to olein different than in cottonseed oil. No compound of the prior art contained a higher percentage of olein or a lower percentage of linolin relatively to each other than cottonseed oil. This was inevitably so, because

> when, in the compounds, oleo or animal stearin was mixed with a cottonseed oil, only the proportion of stearin to the other ingredients was increased. The percentage of the other ingredients relatively to each other was obviously unchanged."

Again on page 18 Respondent's Supplemental Brief states:

> "In all prior art products, whatever proportion of rancidible and stable liquid were found in the cottonseed oil remained the same in the lard substitute."

These statements in one form or another are repeated many times in Respondent's brief and practically the entire argument as to the validity of claims 1 and 2 of the patent in suit is based upon these statements of alleged fact.

The testimony taken in the case shows these statements to be wholly in error, and any argument based upon them must utterly fail.

It should be brought to the attention of the Court that this argument of the Respondent is presented at the eleventh hour and for the first time in this case. It is contrary to the actual facts and is contrary to what was pressed upon both the Trial Court and the Court of Appeals by the Respondent. Furthermore, it is contrary to the findings of both the District Court and the Circuit Court.

The Respondent confuses the glyceride, stearin, with the product called "oleo-stearin" (i.e. beef stearin). Though the names are confusingly similar to the layman, to the oil chemist they mean different products. Stearin is the tri-glyceride of stearic acid, but beef stearin or oleo-stearin is a

composite body or mixture of the glycerides palmitin and stearin (solids) and olein (a liquid). The experts in this case treat the glycerides palmitin and stearin as the same, as both are saturated solid glycerides, and include them both under the name stearin, as they are thus included in the patent in suit. The glyceride stearin has an iodine value of zero. Oleo or beef stearin, which is the harder part of beef tallow, has an iodine value ranging from 8 to 20. The significance of this is hereinafter pointed out. The difference between the glyceride "stearin", and "oleo-stearin" is recognized throughout the entire testimony by all the witnesses, and we deprecate any attempt to confuse them in the mind of the Court.

FIRST. There is no evidence or testimony in the record which shows that in the prior art products the ratio of olein to linolin is the same as in cottonseed oil. Respondent's main brief says (page 69):

> "When an analysis of any incompletely hydrogenized material is made it is not possible to tell what change has taken place without knowing what the proportions of glycerides were in the original oil."

It is equally true of a semi-solid produced by adding oleo-stearin to cottonseed oil that it is not possible to tell what the proportions of glycerides were in the original oil when an analysis of the final product is made.

SECOND. There is no evidence in the record showing the proportions of glycerides in the particular cottonseed oil from which Jewel Compound was made. Cottonseed oil varies a great deal in its proportions of component glycerides, as shown by the analysis of different samples made by Dr. Baskerville (XQ74, Rec. p. 271), Mr. Morrison (Q127, p. 210); Mr. Richter (Q18, p.

358); and Dr. Walker (Q46, p. 318). We here reproduce these analysis:

	Morrison	Walker	Baskerville	Richter
% Stearin	21.8	22	23.3	21.5
% Olein	29.6	32	28.9	32.5
% Linolin	48.6	46	47.8	46.

The analysis of Dr. Baskerville is that of the cottonseed oil introduced in evidence in this case and marked "Plaintiff's Exhibit 4."

Jewel Compound has a ratio of 29 percent olein to 41.5 percent linolin. If it had the same ratio of olein to linolin that Morrison's cottonseed oil has, it would contain only 25.3 percent olein to 41.5 percent linolin, thus showing that the ratio of olein to linolin is greater in Jewel Compound than in cottonseed oil.

If Jewel Compound had the same ratio of olein to linolin that the oil introduced in evidence and analyzed by Dr. Baskerville has, then, according to Respondent's theory, Jewel Compound would contain only 25.1 percent olein to 41.5 percent linolin, whereas, in fact, Jewel Compound contains 29 percent olein.

If the cottonseed oil which Mr. Burchenal (Rec. Q727, p. 65) states was reported to him as having 18 percent stearin, 40 percent olein and 42 percent linolin were used in making Jewel Compound, then Jewel Compound would have a ratio of olein to linolin, of 43.55 percent to 41.5 percent, whereas Jewel Compound has 29 percent olein to 41.5 percent linolin.

The foregoing shows the absurdity of the Respondent's statement. Here is the gist of the matter. By a wholly fortuitous coincidence, the proportion of olein to linolin in the sample of cottonseed oil analyzed by Mr. Richter happens to

have a ratio of olein to linolin not greatly differing from that of Jewel Compound, and Respondent has seized upon this one sample of cottonseed oil upon which to base its erroneous statement of facts, and has ignored all of the other cottonseed oils of which analysis are quoted above. It so happens, however, that if the proportions of olein to linolin found in the sample analyzed by Mr. Richter were present in Jewel Compound, then Jewel Compound would have a smaller ratio of olein to linolin than in cottonseed oil. If Respondent's theory were true, even in this case, Jewel Compound would contain 29.3 percent olein, whereas, in fact, it contains only 29 percent.

There is no truth in the allegation that the ratio of olein to linolin is same in the prior art products as in cottonseed oil.

THIRD. While no analysis of oleo-stearin or beef stearin is given in the record, it is, as its name implies, a mixture of the glycerides olein and stearin.

Dr. Walker in his triangular chart, reproduced opposite page 302 of the record, gives the analysis of beef tallow as comprising 55 percent stearin and 45 percent olein. Oleo-stearin is produced from beef tallow and is "the harder portion of beef tallow which has been separated from the softer oleo oil" (Rec. Q13, p. 345).

In Lewkowitsch's "Chemical Technology and Analysis of Oils, Fats and Waxes," Fifth Edition, Vol. II, page 769, (referred to and cited as an authority at the trial by both Petitioner and Respondent) (XQ166, p. 334; p. 303) we find the following:

"Beef stearin differs in its chemical composition, not only owing to the variation of different specimens of tallow, but also with the pressure applied in the hydraulic press and with the length of time during which the pressure has been allowed to act on the tallow. Commercial samples of beef stearin have melting points varying, as a rule, from 49° to 53°C. The iodine value varies from 8 to 15 and even to 20 and the percentage of stearic acid rises in inverse ratio to the decrease of the iodine value."

On page 767 Lewkowitsch states:

"On the assumption that the fatty acids of tallow consist of palmitic, stearic, and oleic acids only, an assumption which may be considered as correct for all practical purposes, the composition of a sample may be arrived at by determining the proportion of stearic acid in a direct manner. * * * The proportion of oleic acid can be calculated from the iodine value."

He further states on page 766:

"The proportions of palmitin, stearin, and olein in the fats rendered from different parts of the same beast vary."

It will be remembered that in this case and in accordance with the convention in the patent in suit, all experts have agreed in including palmitin and stearin in the one word *stearin*.

Since oleo stearin has an iodine value ranging from 8 to 20, it must contain olein, for if it consisted of only stearin it would have an iodine value of zero.

When oleo stearin or beef stearin, which consists of olein and stearin, is added to cottonseed oil, it must increase, in the final product, the ratio of olein to linolin. It cannot be otherwise.

Jewel Compound contains a greater ratio of olein to linolin than is contained in the cottonseed oil of which it is made, and it contains a smaller percentage of linolin than cottonseed oil.

FOURTH: Flake White consists of cottonseed oil to which hard hydrogenized cottonseed oil is added to make it semi-solid. The hard hydrogenized cottonseed oil has an iodine value of 20, as stated in the Burchenal patent 1,135,935 (Rec. 582, line 36), and therefore having been hydrogenized by the batch or Normann process consists of a mixture of stearin and olein. It contains no linolin because, by the batch process, linolin is first selectedly acted on by the hydrogen. Hence, when the hard hydrogenized fat, consisting of a mixture of oleo and stearin, is added to cottonseed oil, the product (Flake White) must contain, and does contain, a greater proportion of olein to linolin than cottonseed oil and contains a smaller percentage of linolin than cottonseed oil.

This moreover is proven by the testimony of Respondent's chemical engineer. Mr. Morrison stated in effect that the average cottonseed oil used by the Respondent contained a ratio of 29.6% olein to 48.6% linolin (Rec. p. 197, Qs33-35; p. 210); and that a product like Flake White contained a ratio of 28% olein to 42% linolin (Rec. p. 215, Q177). If the ratio of olein to linolin in Flake White were the same as in cottonseed oil, Flake White would contain only 25.5% olein to 42% linolin; but, on the contrary, as shown, it contains 28% olein. Therefore the addition of hard hydrogenized cottonseed oil to cottonseed oil increases in the final product the ratio of olein to linolin.

FIFTH. In all the prior art artificial lards, there is a smaller percentage of linolin than in

cottonseed oil. In the different samples of cottonseed oil analyzed by Dr. Baskerville, Mr. Morrison, Dr. Walker and Mr. Richter, the linolin ranges from 46 percent to 48 percent. In the prior art artificial lards (Jewel Compound and Flake White) the linolin ranges from 41.5 percent to 42 percent. Thus, comparing the prior art products with cottonseed oil, it is plain that the prior art products contain a much lower percentage of linolin or rancidable matter than cottonseed oil.

SIXTH. It will be noted that in this argument as to the validity of the patent, the Respondent has carefully refrained from comparing the patented product with lard. If the gist of the patent is that a product is produced which has a greater ratio of olein to linolin than in cottonseed oil, then for this, as well as many other reasons, the patent is clearly met by lard. In fact, lard is stated by Mr. Richardson to contain a ratio of 48 to 50 percent olein to 8 to 10 percent of linolin.

SEVENTH. As previously stated, the Respondent now presents to this Court by its argument, which we have shown to be untrue and to have no basis in fact, a new case. In so doing, it is now urging to be the fact, that which it stated to be immaterial and of no moment in both the lower Courts. In diametrical opposition to Respondent's present position, it was urged and specifically stated by counsel for Respondent, both during the trial, and in its briefs before the District Court and the Court of Appeals, that claims 1 and 2 of the patent in suit should be regarded without any reference whatsoever to the relative proportions of linolin and olein in the patented product.

On page 266 of the Record appears this statement, made by Respondent's counsel to the Court

at the close of Dr. Baskerville's direct examination in Respondent's *prima facie* testimony:

> "MR. GIFFORD: I will explain to your Honor that the plaintiff's view of this case is that it is not at all complicated and *does not necessarily involve any chemical considerations at all.* The first and second claims are the only ones in issue. If the balance of the claims of the patent were in issue chemical questions might be brought in, but we do not consider them as germane to the discussion and therefore I rest the direct examination of this witness expressly to avoid bringing in unnecessary and irrelevant matter." (Italics ours)

During the cross examination of the same witness appears the following on the record:

> "XQ74. What are the relative proportions of the constituent glycerides in Plaintiff's Exhibit No. 4?
>
> "MR. GIFFORD: If your Honor please, I do not know but what in order to draw a distinct line as to what we consider to be relevant in the case, that I will have to object to that question and to any questions on that line, because we do *not consider that it makes any difference in this case what are the relative values of the constituent glycerides.*
>
> "THE COURT: I will allow it and give you an exception.
>
> "MR. PENNIE: I would say in that regard, your Honor, that the patent itself assumes to say what the constituent glycerides of cottonseed oil are.
>
> "MR. GIFFORD: *But that is the subject of other claims which are not in issue.*
>
> "THE COURT: Yes, I understand your position.
>
> "A. Solid fats 23.3, oleic 28.9, linolic 47.8." (Rec. p. 271). (Italics ours)

In Respondent's rebuttal testimony, Respondent's expert (Dr. Baskerville) testified that the

purpose of hydrogenation was to *increase the proportion of solid fats in the oil to* give it a semi-solid consistency and that this was the essential feature of the patent in suit. He stated:

> " * * * it is the added fats which bring about, or created *the solid fats*, or changes brought about by hydrogenation which *changes the material character of the substance.*" (Rec. p. 459).

Again, in answer to a question by Judge Hand, the witness testified that it is the added solid fat which is the vital thing (Rec. p. 461, Qs. 116-118).

Mr. Gifford was asked by the Court whether his contention was the same, to which he assented (Rec. p. 461). The witness then testified further as follows:

> "Q120. Why do you consider the added fats to be the significant and substantial thing? A. Because the added fat brings about an elevation of the melting point.
>
> "Q121. And what does the added fat have to do with the lard-like qualities of the product? A. When the proper quantity is there, the substance becomes semi-solid and acquires the physical properties of lard.
>
> * * * * * * * * * *
>
> "By the Court:
>
> "Q123. Where is there anything in this patent about added fats? A. It means added solid fat.
>
> "Q124. By reason of the hydrogenation? A. Yes, sir" (Rec. p. 464).
>
> * * * * * * * * * *
>
> "Q151. As I understood you, from a practical standpoint, the cook using the substance has to do with the consistency of the substance which is attained by the increase of solids due to hydrogenizing? A. I think so" (Rec. p. 466).

Again in the Respondent's brief before the United States District Court the following statement was solemnly made in respect of the subject-matter of claims 1 and 2:

> "The essential constituents which make the product lard-like as distinguished from a liquid are the added hard materials, not the changed proportions of the liquids," [linolin and olein] (page 60).

Again

> "We, Plaintiff's counsel, from the outset have urged the practical, simple aspect of the case as being the only aspect relevant to claims 1 and 2. We have urged all along, and continue to urge, that the theoretical complicated considerations introduced by Defendant are not only unnecessary for the decision of the case, but that any decision based upon such considerations would be an error, *because claims 1 and 2 differ from the claims not in issue in that they are expressly and intentionally so drawn as to exclude impractical, theoretical considerations, such as the composition of the body in tri-glycerides*" (page 4). (Italics ours)

Again on page 57:

> "The patent has to do with chemically changing the complex glycerides of the vegetable oil so as to vary the proportions of the liquid and solid components in the oil itself, and thus to produce a food product semi-solid and lard-like. *It aims to produce this change * * * by creating the necessary solid at the expense of the liquids in the oil until the proper consistency of lard is obtained.* This conversion and chemical change of the liquid components to obtain the lard-like product is the essence of the patent in suit. * * * This he did by chemically changing the component tri-glycerides so

that sufficient hardened material was created in the oil to give the entire body the desired homogeneous lard-like consistency. The point was to raise the melting point of the original oil so that it would be semi-solid, plastic, and lard-like at normal temperatures.

"Burchenal was not concerned in this view of the case whether all or a large part of the linolin was changed to olein, or *whether the linolin was less reduced and the olein less increased and the desired consistency was obtained by increasing the stearin*" (page 58). (Italics ours)

" * * * He did not change all of the linolin and olein to stearin, but carried on the conversion until he had made enough solid or saturated material to give him his lard-like hydrogenated food product * * *." page 58

"*The essential constituents which make the product lard-like, as distinguished from a liquid, are the added hard materials, not the changed proportions of the liquids*" (page 60). (Italics ours)

It was conceded, moreover, by Respondent's witnesses (Dr. Baskerville and Mr. Morrison) that in producing artificial lard of semi-solid consistency, substantially the same results were secured whether the hard fat was added by mixing (as in Jewel Compound or Flake White) or in increasing the hard fat by hydrogenation at the expense of the liquid glycerides (Baskerville, Rec. p. 480, XQ242, and Morrison Rec. p. 495, RDQs. 124, 125).

It was on this state of facts, as represented by Respondent and its witnesses in respect of claims 1 and 2 of the patent in suit, that the District Court made the following finding of facts:

"The method of adding cottonseed oil to beef stearin for use as a lard compound was well known and much used, as it still is. The hydrogenation of cottonseed oil resulted in a

reduction of the fluid and substitution of the solid fats. Normann's patent, as well as various experiments of scientists, indicated that the addition of hydrogen to cottonseed oil would result in the reduction or elimination of the fluid and substitution of solid or partially solid fats. No one has shown that the product resulting from such hydrogenation was ever non-edible or unsanitary in any respect" (Rec. p. 761).

The Court held the patent void for lack of invention.

The Court of Appeals in its majority decision stated:

"The third objection to invention is substantially this: The merit or value of what Burchenal claims and what this plaintiff makes and sells, is that it looks like lard, acts like lard and can be used for the purposes of lard without offending the conservatism of chefs, housewives, and maid-servants. But before Burchenal, many imitation lards were made by mechanically mixing hard animal fats and cottonseed oil in varying proportions, and some of these mixtures show on analysis substantially the same chemical characteristics as are shown by Burchenal's chemically produced 'homogeneous semi-solid.' Therefore, it is said that to make the same thing as had been made by earlier lard imitators but in a different way, cannot warrant a patent upon the resulting thing or product whatever may be true in respect of the process by which that product is reached. This is as much as to say (c) that the Burchenal article when completed and ready for use must be old, because other men had earlier arrived at the same chemical result by other paths" (Rec. p. 774).

"It may be assumed as true that by the mixture of cottonseed oil and animal stearin a substance can be produced which for prac-

tical purposes is the same thing as Burchenal's chemically changed cottonseed oil; but one is a mixture and the other is not, and assuming the difference to be unimportant from the standpoint of either chemist or cook, it is a vital difference from that of the law" (Rec. p. 775).

Judge Ward in his dissenting opinion stated:

"* * * It was well known that a vegetable oil could be changed chemically into a hard fat by hydrogenation and of course that at some stage of the process before complete hydrogenation it would be a homogeneous semi-solid. It was also known that the process would not affect the edibility of the product. The product at all stages of the process was therefore old and open to the public for any use of which it was capable. To apply it when semi-solid as a substitute for animal lard in cooking was no doubt novel and useful but was not in my opinion invention. To one skilled in the chemical art such a use was as obvious, if he thought about it at all, as were the many mechanical improvements which, though new and useful, have been held not to be inventions because within the capacity of those skilled in the particular art" (Rec. p. 779).

In its decision on re-hearing the Court of Appeals said in respect of the patented products:

"Patentable novelty is not in their parts—as revealed by quantitative or qualitative analysis, but in the practical functional identity between animal products, and a vegetable product as chemically changed" (Rec. p. 803).

In other words, the Court of Appeals made the finding, as did the District Court, that the prior art products and the patented products are the same, though made by different processes. It held that there was no patentable novelty in the con-

stituents of the patented product as "revealed by quantitative or qualitative analysis."

The Court of Appeals erred, therefore, in its application of the law, since, in finding the facts which it stated, it should have held the patent to be invalid because the product was not new, even though it had been produced by a process of incomplete hydrogenation instead of by what the Court called "mixing."

The belated attempt to found the judgment in this case on the proposition that the prior art products contain the same ratio of olein to linolin that is found in cottonseed oil is, as we have shown from the foregoing, contrary to what was urged by the Respondent on the District Court and the Court of Appeals, contrary to the evidence of its own witnesses, and contrary to the facts as well as the findings of the Courts.

There is therefore no "radically and entirely new principle" involved in the product of the patent in suit, as erroneously alleged by the Respondent.

In any event the alleged principle is not due to anything which may be ascribed to Burchenal, for the product of the patent is the inevitable result of the practice of a batch process of hydrogenation which Burchenal confessedly did not invent, but which was disclosed to him in all details by Kayser, who got his knowledge from Normann (Petitioner's main brief, pages 101-125). Kayser disclosed to Burchenal the incompletely hydrogenized semi-solid cottonseed oil products now claimed in the Burchenal patent, as shown by original records (Rec. p. 76).

Kayser's patent 1,008,474 (Rec. p. 577, lines 95-102) discloses both completely and *incompletely hydrogenized* products, i. e. solid and *semi-solid*

products, produced by hydrogenizing cottonseed oil by the batch process. Burchenal confessed that he did not claim to be the inventor of what is disclosed in Kayser's patents (Rec. p. 37, Q42), and that the procedure set forth in the patent in suit is the same as that in the Kayser patent and was disclosed to him by Kayser (Rec. p. 68, Q757, 758). This information was vouchsafed reluctantly by Burchenal, only after he was compelled to answer by order of the District Court (Rec. p. 54). The batch procedure of hydrogenation, as stated by Morrison (Rec. p. 197, Qs28-30) inevitably results in an increase in the ratio of olein to linolin in the incompletely hydrogenized product. It was not until two years after the application for the patent in suit was filed that Burchenal filed an amendment to the specification now incorporated as lines 14-74, page 1, and 10-26, page 2 of the patent, in which the proportions of glycerides are set forth (Rec. p. 543). When the application was originally filed, nothing was said about the proportions of olein to linolin, and at that time the effect of the evidence is that he did not know what were the proportions of component glycerides in the incompletely hydrogenized product (Qs740-753, Rec. p. 67). Anderson corroborates this (Q172, Rec. p. 111). Finally, the information in reference to the glycerides was given to Burchenal by others, and was not secured by his own efforts (Qs723-726, Rec. p. 65, Qs.823-831, Rec. p. 73). He had to admit, even at the time of giving his hostile testimony in 1916 under subpoena by the petitioner, that he did not know then and never did know what factors were necessary to produce the patented product itself, i. e. an incompletely hydrogenized product which is high in olein and low in linolin (Qs856-858, Rec. p. 78).

As the District Court found:

> "No step was taken by Burchenal that could possibly amount to invention" (Rec. p. 764).

Judge Ward, of the Court of Appeals, in his dissenting opinion said:

> "It was well known that a vegetable oil could be changed chemically into a lard fat by hydrogenation and of course at some stage of the process before complete hydrogenation it would be a homogeneous semi-solid. * * * The product at all stages of the process was therefore old and open to the public for any use of which it was capable" (Rec. p. 779).

JEWEL COMPOUND.

The Plaintiff's Brief in Reply makes another very serious misstatement of facts. It says on page 3:

> "The compounds like Jewel were not in the prior art but were the subject of Burchenal's companion patent."

Again on page 12 it says:

> "It should be remarked, however, that the Jewel Compound does not represent anything in the prior art, because the only compounds in the prior art were made by mixing the animal stearin with cottonseed oil; while Jewel is made by mixing hydrogenated cottonseed oil with unhydrogented cottonseed oil."

The fact is that the sample of Jewel Compound introduced in evidence (Rec. p. 347, Qs24-28) and marked "Exhibit W" and which Mr. Richardson called "Jewel Shortening" was stated by him to be made of 88 percent of cottonseed oil and 12 percent of oleo-stearin. He stated that this product had been made by Swift & Company since

1890 and that the compound introduced in evidence by him analyzed as 29.5 percent stearin, 29 percent olein, 41.5 percent linolin (Qs133, 135, Rec. pp. 356, 357.)

FLAKE WHITE.

Respondent's Main Brief states that the product, i.e., Flake White, consisting of a mixture of cottonseed oil and hard hydrogenized oil is not a part of the prior art. In Respondent's main brief it is stated that the

> "all vegetable compound, however, is not truly a part of the prior art as it is assumed to be by the petitioner, but, on the contrary, it is covered by companion patent of Burchenal filed on the same date with the patent in suit and contemporaneously pending and issued on the same day, patent No. 1,135,935 The law is well settled that neither of two companion applications of the same applicant co-pending in the Patent Office can be treated as prior art before the other." Page 4.)

In the two sentences quoted the Respondent set up a man of straw.

In Section 4920, U. S. Revised Statutes, one of the defenses against a patent is prior knowledge or use of the thing patented. A separate defense is that the invention had been printed or described in some printed publication before the supposed invention or discovery of the patent.

Petitioner does not allege, or rely upon, the companion Burchenal patent as a patent or a publication which anticipates the invention of the patent in suit. But the Petioner urges and states the fact to be however that the all-vegetable semi-solid fat (Flake White) consisting of cotton-

seed oil and hard hydrogenized cottonseed oil was known and used and was placed on the market long prior to the invention of the Burchenal patent in suit. In support of our contention, we refer to the following statements of Respondent in its brief before the Court of Appeals:

"The application for the mixture patent (Burchenal) 1,135,935, was pending in the Patent Office contemporaneously with that of the patent in suit, *but the two inventions were made at widely separated dates.* The invention of mixture patent (Flake White) was conceived in 1907, whereas that of the patent in suit was not conceived until the fall of 1909." (Appellant's Brief, C. C. A., p. 2). (Italics ours)

"By the winter of 1908-9 the Proctor-Gamble Company had become satisfied that they could make a merchantable compound or mixture with the hardened oil as an ingredient, and by February, 1909, they had the plant completed for hardening the oil. They had also by this time purchased the ~~land~~ Lard compound business of The McCaw Manufacturing Company of Macon, Georgia, and from the *spring* of *1909* they commenced to harden oil in a regular commercial apparatus at Ivorydale, Cincinnati, and to ship this hardened oil in large quantities to Macon, Georgia, *where it was used to mix with cottonseed oil in the proportion of about 85% to 90% of cottonseed oil and 15% to 10% of the hardened oil.* This product, a mixture of cottonseed oil and hardened cottonseed oil, to give the oil the semi-solid consistency of lard, *was put out under the name of Flake White.*" (Italics ours.) (Page 18 of the same brief.)

"*The Court below need not have gone any further back than our own Flake White patent to find in the prior art the nearest approxi-*

> *mation among the mixtures. If there is no inventive distinction between the mixture and the homogeneous body it was sufficient for the decision of this case to say that Crisco (the patented product) is anticipated by the Flake White."* (Italics ours) (Same brief, page 47.)

Furthermore, in Respondent's brief filed in this Court—in opposition to the petition for writ of certiorari, on page 10, *the Respondent recites the following as prior art*:

(1) Unconverted cottonseed oil—a liquid;

(2) Completely converted cottonseed oil—a hard solid;

(3) A mixture of from eighty-five to ninety per cent. of (1) (cottonseed oil) with from ten to fifteen percent of (2) (hard hydrogenized cottonseed oil.)

After reciting the substance of the evidence which showed that Burchenal did not produce either of the food products the District Court stated:

> "Under such circumstances the meagerness of the evidence which has been adduced to show that Burchenal had anything to do with the development of the lard-like food product which is the subject of the patent in suit, coupled with his admission that the entire process under which it was made was the work of Kayzer is most significant and makes it impossible to find that Burchenal invented anything. * * * While there is some general evidence of what Burchenal and others did, or directed, I can find no real proof that any one but Kayzer did anything of substantial moment. No step was taken by Burchenal that could possibly amount to invention." (Rec., page 764.)

The Court of Appeals (majority decision) stated:

> "When Kayzer began to produce by his process a hard fat, it occurred certainly to Mr. Proctor (the plaintiff's president) and not improbably to Kayzer himself, that since substantially saturated cottonseed oil was a fair commercial equivalent for animal stearin that since frying and shortening compounds were largely manufactured by combining animal stearin with cottonseed oil, so they might be made by mechanically mixing liquid oil and hardening oil." (Rec., page 777.)

The Court of Appeals found that the date of the alleged invention of the patent in suit was not until Kayzer had returned to England in July, 1910, or was on the point of going. Therefore, even assuming Burchenal did make the alleged invention the patent in suit (the District Court held that he did not on the evidence) this invention was not made, according to the Respondent's own statement, until the all-vegetable semi-solid fat, Flake White, consisting of hard hydrogenized cottonseed oil and cottonseed oil had been on the market for a long time and was known to or used by others.

We submit that the Respondent cannot now, in view of its own previous statements and of the findings of fact by both lower Courts, be heard to deny that Flake White is a part of the prior art.

Sears patent shows all vegetable lard.

The contention, that the patented product is the first all-vegetable artificial lard, is not true. It was anticipated not only by Flake White but also by a British patent, for Flake White was not the first all-vegetable lard substitute. The British patent to Sears, 10,783, of 1887 (Rec., page 709), describes an artificial lard consisting

of cottonseed oil and a hard VEGETABLE fat. Sears states that while "the stearine of beef is preferred", he may use either animal or VEGETABLE hard fat. He also states that a hard fat "containing the oil as well as stearine may be employed by using a larger relative quantity."

Thus Sears discloses a lard-like product consisting of cottonseed oil hardened by a hard vegetable fat, and also a product consisting of cottonseed oil hardened by an animal fat. He expressly states that the hard animal or vegetable fat may contain the oil (olein), as a result of which, of course, the resultant product contains a greater ration of olein to linolin than is found in cottonseed oil. These vegetable hard fats, known as vegetable tallows, are produced in large quantities and are hard solids consisting of stearin and olein. (See, e. g. Lewkowitsch Vol. 2, pp. 592-595). Sears also explains a method of treating his material to make it physically homogeneous. He says:

> "The compound, from a melting temperature of the several ingredients is chilled rapidly to prevent crystalization and separation."

In other words, he states, what those skilled in the prior art know, that his material shall be subjected to the same processes to which lard is subjected to make it homogeneous in appearance.

Whether a product is of all-vegetable origin, of all animal origin, or is partly vegetable and partly animal, is of no consequence, so far as the consumer is concerned. The public purchase all three indiscriminately. This is shown by the testimony of both Respondent's officer, Mr. McCaw, and Mr. Richardson of Swift & Company. McCaw testified that, after hydrogenized cottonseed oil had been substituted for oleo stearin in making Flake White, it made no difference what-

ever to the user, and the public would just as soon have the one as the other (Rec. p. 99, RDQs 190-195). Mr. Richardson testified that the products are received by the trade indifferently (Rec. pp. 355, 356, RDQs124-131). And furthermore the glycerides,—stearin, olein and linolin,—which are combined in different proportions in all of these products, are respectively the same chemically whether their origin is animal or vegetable, and are also severally the same from every other standpoint, just as alizarine is the same whether compounded from a coal tar product (anthracene) or extracted from a vegetable root (madder). In the same way, granulated sugar is the same whether it derives its origin from the beet or from the sugar cane. Since sugar, derived from cane, is a well known product, a claim for sugar, because derived from beets, would be unpatentable, because both are the same thing to chemist and cook.

Hence any attempted distinction between the product of the patent and the products of the prior art, on the ground that the former is "all-vegetable", is not only without foundation, but without any merit from the standpoint of "chemist or cook".

Prior art products are homogeneous.

In its reply brief, the Respondent attempts to elaborate the point, which it made in its main brief in reference to validity, that the Patent Office recognized the product of the patent as "homogeneous in the sense of being made up of a single unit chemically changed throughout as distinguished from the mixture of two units such as the compound". If the single unit, when chemically changed, is the same as the product made of two units mixed together, it makes no difference as to the patentable novelty how the two

products were obtained. We have already shown that both products are semi-solid; that they are both homogeneous just as lard, which is made of a single unit, is homogeneous; and that they all consist of mixtures of the glycerides olein, linolin and stearin.

Dr. Baskerville, Respondent's expert, defines "homogeneous" as "physically uniform", and judges the homogeneity of a product *by appearances only* (Rec., p. 267, XQ38; p. 265, Q11.) All of the prior art products are homogeneous as shown by their appearance, and they are all treated in the same way by the use of lard rolls and beaters to make them homogeneous.

Kream-Krisp Circulars.

One of the main points of Respondent is that the patented product contains no oil itself and that Petitioner's circulars state that Kream Krisp contains no oil itself and reliance is placed thereon as tending to establish the validity of the patent in suit.

Petitioner showed by evidence of Dr. Walker and Mr. Richter that Kream Krisp does contain to the extent of 84% to 85%, the original unhanged cottonseed oil, and is not chemically homogeneous; and in rebuttal the Respondent, though it had ample opportunity so to do, did not challenge or deny their statements. In reference to the Kream Krisp circulars, the Petitioner painstakingly, by competent sworn evidence, contradicted the opinions of the writer of the circulars by showing what the actualities are, and these facts are:

(1) Kream Krisp is a mixture by cottonseed oil 84%-85% and solid fats 14%-15% produced by hydrogenizing a part of the oil (Rec., p. 329, XQs. 124, 125; pp. 340, 341. Qs. 223, 224; p. 379, Qs. 216, 218).

(2). Kream Krisp contains 37.7% linolin and therefore does contain a large amount (over one-third) of rancidable material which is a part of the unhydrogenized cottonseed oil of which Kream Krisp is in part composed, and is thus like Jewel Compound.

(3) Neither Kream Krisp nor the patented product is immune to chemical change (Bacon, Rec., p. 449, RDQs. 363, 366.)

(4) The cottonseed oil is not completely changed by hydrogenation. In fact, in Kream Krisp, not over 14%-15% is converted by hydrogenation.

(5) In thee patented product, as shown in Petitioner's main brief (p. 66, foot note) not over 32.5% of the oil has been acted on by hydrogen while about 67.5% remains unaffected. In other words, there is still 6%-10% of the patented product which consists of linolin in the original cottonseen oil which has not been changed; of the original olein in the cottonseed oil, only a small amount is converted to stearin and the remainder is unaffected by the hydrogenation; and the original stearin in the cottonseed oil is not affected by hydrogenation; so, as stated, it may be demonstrated mathematically that in the patented product 67.5% consists of the original cottonseed oil.

Step by step the Petitioner disavows the statement, quoted in Respondent's brief, from the Kream Krisp circulars, by showing them to be incorrect. Certainly Respondent cannot base the validity of the Burchenal patent on unsworn expressions of opinion in an advertising circular.

Moore patents deny Respondent's contention.

There is absolutely nothing in the Moore patents

owned by Petitioner, which proves the Respondent's contention that incompletely hydrogenized oil contains no cottonseed oil, although the Respondent relies thereon. The Respondent quotes from Moore patent No. 1,184,480, a statement of the reason why Mr. Moore uses asbestos fibre in the diaphragm, which is, to prevent the formation of cracks therein. It is, of course, desirable to prevent cracks. Hydrogen is one of the lightest gases and is under great pressure in that part of the hydrogenizing apparatus above the diaphragm. If there are cracks in the diaphragm, the gas would rush through them and would not force the oil through the diaphragm which is thick and resistant to the passage of the oil.

There is a direct statement in the Moore patent No. 1,121,860, that a portion of the oil does pass through unchanged:

> "Hence, through that portion of the catalyzer which, at the moment, is not receiving the spray, hydrogen is passing through in such quantities and at such velocity as to blow off or remove the films or coatings of oil which inclose the particles thereof. Thus each restricted portion of the catalyzer first receives the mixture of oil and hydrogen and is *then freed of the oil, EITHER AS SUCH, or in saturated condition or partly saturated condition.*" (Rec., p. 683, lines 81-91.)

The patent further states in line 127, Record, page 685:

> "The pressure of the hydrogen atmosphere in the compartment 19 is, as I have explained, preferably approximately 60 pounds, so that the oil and hydrogen are forced through the diaphragm into intimate contact with the catalyzer, and *more or less* of the oil is reduced by the hydrogen."

Respondent's brief also quotes a passage from line 11 (Rec., p. 686) of the Moore patent to the effect that the hydrogen, with its entrained oil, is pumped back through a separator, and argues from this that this is the only oil which is not reduced and therefore the remainder of the oil must be reduced. The reason for separating the oil, whether it is hydrogenized or unhydrogenized oil, from the hydrogen with which it is entrained, is that the hydrogen, which is reused, is subsequently heated to a high temperature before it is again returned to the diaphragm, the heater being indicated on the drawings at 56. It is an electric heater, and, if oil were brought in contact therewith, it would be charred or burned, and burned oil would be carried into the hydrogenizing apparatus and mixed with the product, and would discolor it, which, of course, is a thing to be prevented.

A special heater for accomplishing this result is described in the second Moore patent No. 1,184,480, on page 695 of the Record (see lines 40 to 45), by which the hydrogen may be heated; and the entrained oil is removed before it is heated, so that the oil will not be charred and a carbonaceout material deposited on the diaphragm so as to discolor the resulting product, as explained in the patent.

There is absolutely nothing in either of the Moore patents which proves that all of the oil is hydrogenized, and that a large proportion thereof does not pass through without any change in any way whatever. The Moore patents state the contrary to be the fact as we have shown.

To attempt to reason that a partially hydrogenized oil does not contain cottonseed oil, and to argue the validity of its patent on irresponsible

unsworn statements of opinion in circulars, and on the excerpts from the Moore patents, in the face of the quotations herein made from those same patents, shows the weakness of the Respondent's position.

Halphen test does not prove absence of cottonseed oil.

The insistence of the Respondent that the hydrogenized product contains no cottonseed oil itself in the last analysis is based solely on the statement in the patent in suit that the product shows no free cottonseed oil *"when subjected to the Halphen test". The patent does not say that the product does not contain any cottonseed oil. It does say that it fails to respond to the Halphen test.* Claim 4 (page 2 of the patent, line 50) says that the product gives "no reaction for cottonseed oil under the Halphen test", which is an accurate way of stating it. Now, in our main brief, we have shown that the failure of cottonseed oil to respond to the Halphen test does not prove that it is not cottonseed oil. The authority quoted at the trial, Lewkowitsche's Chemical Technology and Analysis of Oils, Fats and Waxes (p. 204, Vol. II, Fifth Ed.), says:

> *"It should further be noted that failure to obtain the color in the Halphen test does not prove the absence of cottonseed oil.* For the chromogenetic substance [which gives the color] is destroyed by heating cottonseed oil to 250° C., or even keeping it at 200° C. for some prolonged time, or by blowing cottonseed oil with air * * *. Cottonseed oil so treated no longer gives the color reaction. * * * *Hence a negative test in a suspected sample is no conclusive proof of the absence of cottonseed oil* * * * " (Italic ours).

The same authority refers to the fact that "heating (cottonseed oil) for one hour to 140° 150° C. in steel pan suffices to nullify the Halphen color test".

Again in Vol. II. p. 722, the same authority says:

> "*A negative Halphen test, as has been pointed out already, does not prove the absence of cottonseed oil,* since cottonseed oils which have been heated do not give a coloration with Halphen's reagent" (Italics ours).

Dr. Baskerville, Respondent's expert, testified:

> "It is probably the best test for the detection of cottonseed oil, *but it is not an absolutely final test*" (Italics ours). Rec. p. 266.

Mr. Richter testified:

> "Q35. And the heating of the cottonseed oil at an elevated temperature does not destroy those chromegenetic substances which causes the red coloration when the oil is treated with the Halphen reagent? A. Yes, sir, heating the oil will destroy this test.
>
> "Q36. That heating destroys the capacity of the oil to respond to the Halphen test? A. Yes, sir.
>
> "Q37. That is what you mean? A. Yes.
>
> "Q38. But the material is cottonseed oil just the same? A. The oil is not different in any chemical way that we know of, merely that the qualitative Halphen test has been disposed of." (Rec. p. 361).

The Halphen test shows the presence of minute impurities or chromogenetic substances which are found in cottonseed oil, just as various albuminoid and other foreign substances are found in crude cottonseed oil and other oils. The removal of these foreign substances and minute chromogenetic materials from cottonseed oil still leaves it as cottonseed oil.

As to the sufficiency of Halphen test, on which the Respondent now relies, we quote from Respondent's brief in the District Court:

> "The patent in suit describing the specific product claimed in claim 4 says (p. 2, line 7): 'it shows no free cottonseed oil when subjected to the Halphen test'. * * * But while this test is specified in claim 4, it is omitted from claims 1 and 2 in suit, and is therefore irrelevant to the present issue. *The Halphen test, moreover, is irrelevant and immaterial from any practical standpoint. It is admitted by everybody that the substance which reacts in showing the test is so minute that no one has ever determined exactly what it is.*" (Italic ours) (p. 40)

These minute impurities, which cause the red coloration in the Halphen test, have no food value. That which makes cottonseed oil of value as a food is the glycerides of which it is composed. These glycerides are present in the partially hydrogenized oil as in the liquid oil. If hydrogenizing a part of the oil should destroy in the remainder of the oil the chromogenetic substances which cause a red coloration under the Halphen test, it does not change the fact that the remainder of the cottonseed oil, which has not been hydrogenized, is still cottonseed oil.

If Potomac River water could be identified as such by a chemist, by the presence of a minute percentage of clay, the removal of the clay from a second sample of the same water would still leave it as Potomac River water, notwithstanding that a chemist should find that it would not respond to his tests for clay.

Under the heading of Halphen Test, page 62 of the Respondent's main brief, the testimony of the witness Richter is challenged as being un-

corroborated. Mr. Richter testified that the particular sample of Kream Krisp introduced in evidence was the first that he had ever tested which did not show the red color when subjected to the Halphen test. (Rec. p. 360, Q32). Mr. Richter said that the Defendant's product was subjected to this test four or five times a week, and that this was done ever since he was connected with the Company in 1914, at the time when Kream Krisp was put upon the market. (Rec. p. 388, XQs. 329, 333). He stated that, after obtaining a negative test with the particular sample of Kream Krisp in evidence, he went back over all of the old samples which had been stored away for two or three years, and subjected each to the Halphen test, and found only two or three which gave a negative reaction. (Rec. p. 388, XQ328). Dr. Walker corroborated Mr. Richter by stating that the samples of Kream Krisp which he had analyzed gave the red color when subjected to the Halphen test. (Rec. p. 333, XQ157). It is known that the heating of cottonseed oil will destroy its capacity to respond to the Halphen test, in Defendant's process, the oil is heated, not only during hydrogenation but previous thereto, and Mr. Richter explained that the particular sample of Kream Krisp in evidence had undoubtedly been held at a high temperature which would, of course, prevent its responding positively to the Halphen reaction.

What is the evidence to the contrary? It is as follows:

Dr. Baskerville, Respondent's expert, was questioned as follows:

> "Q162. How many specimens of 'Kream Krisp' did you apply the Halphen test to, and when were they obtained? A. I applied the test to *one sample* received from Mr. T. B. Kerr.

"Q163. Received from the original package? A. It was in an original package, but not this package. I received a sample taken from this, that is included here, and a sample I obtained from Portland, Maine." (Rec. p. 468) (Italic ours)

Dr. Baskerville had examined only two samples.

Mr. Morrison had to confess that he had only applied the Halphen test to not more than a dozen specimens of Kream Krisp, and that some responded to the test and some did not.

The District Court, before whom this case was tried, had an opportunity to hear these witnesses and to observe them and their demeanor when on the stand; and it is evident that in his decision Judge Hand was not impressed by the meagre testimony of Dr. Baskerville and Mr. Morrison. He said: "In fact Kream Krisp seems to present many of the objections referred to in Burchenal's specification and to lack the very things upon which the latter based his right to receive a patent." (Rec. p. 765).

Conclusion.

It is impossible to follow all of the tergiversations of Respondent's briefs without making this supplemental brief too long. The matter in the last analysis comes to this: The Respondent concedes "that a patent for a product, if the product is old, cannot be sustained because of novelty of process, nor a Defendant's product like the prior art made by a different process held an infringement." (p. 2, Respondent's supplemental brief). It remains, therefore merely to compare the patented product with the products of the prior art, and to compare the Defendant's product Kream Krisp with the product of the patent in suit. Therefore we may disregard the statement of *process* in the claims, namely, that of

incomplete hydrogenation. We may furthermore disregard the statement of *origin* of the product, to wit, that it is made of cottonseed oil. The claim is for a homogeneous lard-like food product. Lard is a homogeneous lard-like food product. The products of the prior art are homogeneous lard-like food products. All of the prior art products are white or yellowish semi-solids closely simulating lard. The product, referred to in claims 1 and 2 of the patent in suit, is said in the patent in suit to more closely resemble lard than the commercial mixtures of cottonseed oil and animal oleo stearin. The more closely identical it is with lard, the more does it lack novelty. If it is identical with lard, it is certainly not new, regardless of the process by which it is made and of the materials of which it is produced.

The lard-like food product of the patent is said by the Court of Appeals to be indistinguishable by chemist or cook from the prior art artificial lards. The Respondent's witnesses were forced to admit that the prior art products were made of cottonseed oil, and that, in making them of semi-solid consistency, there was no difference in the result produced (A) by hardening the oil by incomplete hydrogenation and (B) by hardening the oil by the addition of oleo stearin or hardened hydrogenized oil.

In comparing Kream Krisp with the products of the prior art, it is at once apparent that they are almost identical. There is no greater difference in the percentages of linolin found in Kream Krisp and in Jewell Compound than exists between two samples of cottonseed oil. There is practically no difference in the percentages of olein found in Kream Krisp and Jewell Compound than in different samples of cottonseed oil. The percentages of stearin in Kream Krisp

and in Jewell Compound are almost exactly the same. This is ocularly demonstrated by the diagram in Petitioner's main brief opposite page 68. When the facts are, as they are shown to be in this brief, and the law is, as the Respondent concedes it to be, there is no escaping from the two propositions; first, that the patent in suit is invalid, and, second, that the claims, even if valid are restricted by the disclosures of the prior art, and are not infringed by Kream Krisp which is substantially identical with the prior art.

When, in addition, it is considered

(a) That Burchenal by his own confession did not invent the process of incompletely hydrogenizing cottonseed oil;

(b) That he confessedly did not know what factors were necessary to produce a semi-solid product which is high in olein and low in linolin;

(c) That in fact he did not even make, or know who made, any of the analyses which showed the semi-solid material to be "high in olein and low in linolin", and that the analyses were not supplied until after the patent was applied for;

(d) That the batch process of hydrogenizing belonged to the public for all purposes in making solid and semi-solid products; and

(e) That, by the law of the batch process, a semi-solid product produced thereby inevitably had—even though Burchenal did not know it—a high proportion of olein and a low proportion of linolin:—

We submit that the conclusion reached by the District Court and by Judge Ward of the Circuit Court of Appeals, that the patent is void, is inevitable.

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